

IN THE CLAIMS

1-37. (canceled).

38. (currently amended) A display device comprising:

a semi-transparent reflective layer;

a first electrode of a light reflecting material;

a second electrode of a transparent material; and

an organic layer including a light emitting layer interposed between the first electrode and the second electrode,

wherein,

a cavity portion comprises one of a gap between an interface between the first electrode and said organic layer and an interface between the organic layer and said semi-transparent reflective layer, a gap between an interface between the semi-transparent reflective layer and the second electrode and an upper edge interface of the second electrode, and a gap between an interface between the first electrode and said organic layer and said upper edge interface of the second electrode is comprised of at least the light emitting layer or one of second electrodes,

wherein an optical path length L of said cavity portion has a positive minimum value in a range that satisfies the equation:

$$(2L)/\lambda + \Phi/(2\pi) = m \text{ (}m \text{ is an integer)}$$

where Φ radians is the sum of phase change amounts to reflection of the light emitted from the light emitting layer at both interfaces bounding the gap the phase shift produced in light generated in said light emitting layer reflecting off said second electrode and λ is the peak wavelength of the spectrum extracted through said second electrode.

39. (currently amended) A display device comprising:

a semi-transparent reflective layer;

a first electrode of a light reflecting material;

a second electrode of a transparent material; and

an organic layer including a light emitting layer interposed between the first electrode and the second electrode,

wherein,

a cavity portion comprises one of a gap between an interface between the first electrode and said organic layer and an interface between the organic layer and said semi-transparent reflective layer, a gap between an interface between the semi-transparent reflective layer and the second electrode and an upper edge interface of the second electrode, and a gap between an interface between the first electrode and said organic layer and said upper edge interface of the second electrode is comprised of at least the light emitting layer or one of second electrodes,

wherein an optical path length L' of said cavity portion satisfies the equation:

$$(2L')/\lambda + \Phi/(2\pi) = m_1 + 4 \quad (m \text{ is an integer})$$

where Φ radians is the sum of phase change amounts to reflection of the light emitted from the light emitting layer at both interfaces bounding the gap the phase shift produced in light generated in said light emitting layer reflecting off said second electrode and λ is the peak wavelength of the spectrum of green light extracted through said second electrode, and wherein an optical path length L of the cavity portion has a positive minimum value in a range that satisfies the equation below and m_1 is the integer by adding 4 to one of integers m that satisfies the equation below:

$$(2L)/\lambda + \Phi/(2\pi) = m \quad (m \text{ is an integer}).$$

40. (currently amended) A display device comprising:

a semi-transparent reflective layer;

a first electrode of a light reflecting material;

a second electrode of a transparent material; and

an organic layer including a light emitting layer interposed between the first electrode and the second electrode,

wherein,

a cavity portion comprises one of a gap between an interface between the first electrode and said organic layer and an interface between the organic layer and said semi-transparent

reflective layer, a gap between an interface between the semi-transparent reflective layer and the second electrode and an upper edge interface of the second electrode, and a gap between an interface between the first electrode and said organic layer and said upper edge interface of the second electrode is comprised of at least the light emitting layer or one of second electrodes,

wherein an optical path length L' of said cavity portion satisfies the equation:

$$(2L')/\lambda + \Phi/(2\pi) = m_1 + q \quad (m \text{ is an integer})$$

where Φ radians is the sum of phase change amounts to reflection of the light emitted from the light emitting layer at both interfaces bounding the gap the phase shift produced in light generated in said light emitting layer reflecting off said second electrode and λ is the peak wavelength of the spectrum of green light extracted through said second electrode, and wherein an optical path length L of said cavity portion has a positive minimum value in a range that satisfies the equation below and m_1 is the integer by adding 4 to one of integers m that satisfies the equation below and q is the integer not smaller than 10:

$$(2L)/\lambda + \Phi/(2\pi) = m \quad (m \text{ is an integer}).$$

41. (currently amended) A display device comprising:
a semi-transparent reflective layer;
a first electrode of a light reflecting material;
a second electrode of a transparent material; and
an organic layer including a light emitting layer interposed between the first electrode and the second electrode,

wherein,

a cavity portion comprises one of a gap between an interface between the first electrode and said organic layer and an interface between the organic layer and said semi-transparent reflective layer, a gap between an interface between the semi-transparent reflective layer and the second electrode and an upper edge interface of the second electrode, and a gap between an interface between the first electrode and said organic layer and said upper edge interface of the second electrode, is comprised of at least the light emitting layer or one of second electrodes, and

a color filter is provided for transmitting light resonating in said cavity portion and extracted through said second electrode, and
reflectance of external light is limited to 30% or less.

42. (currently amended) A display device of claim 41,

wherein,

an optical path length L of said cavity portion has a positive minimum value in a range that satisfies the equation:

$$(2L)/\lambda + \Phi/(2\pi) = m \text{ (m is an integer)}$$

where Φ radians is the sum of phase change amounts to reflection of the light emitted from the light emitting layer at both interfaces bounding the gap the phase shift produced in light generated in said light emitting layer reflecting off said second electrode and λ is the peak wavelength of the spectrum extracted through said second electrode.

43. (currently amended) A display device of claim 41,

wherein,

an optical path length L' of said cavity portion satisfies the equation:

$$(2L')/\lambda + \Phi/(2\pi) = m_1 + 4 \text{ (m is an integer)}$$

where Φ radians is the sum of phase change amounts to reflection of the light emitted from the light emitting layer at both interfaces bounding the gap the phase shift produced in light generated in said light emitting layer reflecting off said second electrode and λ is the peak wavelength of the spectrum of green light extracted through said second electrode, and m_1 is the integer by adding 4 to one of integers m that satisfies the equation:

$$(2L)/\lambda + \Phi/(2\pi) = m \text{ (m is an integer).}$$

44. (currently amended) A display device of claim 41,

wherein,

an optical path length L' of said cavity portion satisfies the equation:

$$(2L')/\lambda + \Phi/(2\pi) = m_1 + q \text{ (m is an integer)}$$

where Φ radians is the sum of phase change amounts to reflection of the light emitted from the light emitting layer at both interfaces bounding the gap the phase shift produced in light generated in said light emitting layer reflecting off said second electrode and λ is the peak wavelength of the spectrum of green light extracted through said second electrode, and m_1 is the integer by adding 4 to one of integers m that satisfies the equation and q is the integer not smaller than 10:

$$(2L)/\lambda + \Phi/(2\pi) = m \text{ (}m \text{ is an integer).}$$

45. (currently amended) Any of claims 38-44, further comprising a substrate on which the first electrode, the light emitting layer, and the second electrode, and the light emitting layer are sequentially stacked.

46. (canceled).

47. (canceled).

48. (canceled).

49. (currently amended) A display device, comprising:
a semi-transparent reflective layer;
a first electrode of a light reflective material;
a second electrode of a transparent material; and
an organic layer including a light emitting layer interposed between the first electrode and the second electrode,

wherein,

a cavity portion comprises a gap between an interface between the first electrode and said organic layer and an interface between the organic layer and said semi-transparent reflective layer, is comprised of said light emitting layer for resonating light generated in said light emitting layer, and an optical path length L of said cavity portion is limited to within one half of

the half-width of said emission spectrum when said optical path length is determined such that the difference between the peak wavelength of the spectrum of light emitted by the device upon the a change in changing view angle and the peak wavelength of the internal emission spectrum.

50. (previously presented) The display device of claim 49 having a color filter for transmitting light resonating in said cavity and extracted through said second electrode.

51. (new) A display device comprising:

a semi-transparent reflective layer;

a first electrode of a light reflecting material;

a second electrode of a transparent material;

a passivation film on said second electrode; and

an organic layer including a light emitting layer interposed between the first electrode and the second electrode,

wherein,

a cavity portion comprises a gap between an interface between the semi-transparent reflective layer and the second electrode and an upper edge interface of said passivation film,

wherein an optical path length L' of said cavity portion satisfies the equation:

$(2L')/\lambda + \Phi/(2\pi) = m_1 + 4$ (m is an integer)

where Φ radians is the sum of phase change amounts to reflection of the light emitted from the light emitting layer at both interfaces bounding the gap and λ is the peak wavelength of the spectrum of green light extracted through said second electrode, and wherein an optical path length L of the cavity portion has a positive minimum value in a range that satisfies the equation below and m_1 is the integer m that satisfies the equation below:

$(2L)/\lambda + \Phi/(2\pi) = m$ (m is an integer).

52. (new) A display device comprising:

a semi-transparent reflective layer;

a first electrode of a light reflecting material;

a second electrode of a transparent material;

a passivation film on said second electrode; and

an organic layer including a light emitting layer interposed between the first electrode and the second electrode,

wherein,

a cavity portion comprises a gap between an interface between the semi-transparent reflective layer and the second electrode and an upper edge interface of said passivation film,

wherein an optical path length L' of said cavity portion satisfies the equation:

$(2L')/\lambda + \Phi/(2\pi) = m_1 + q$ (m is an integer)

where Φ radians is the sum of phase change amounts to reflection of the light emitted from the light emitting layer at both interfaces bounding the gap and λ is the peak wavelength of the spectrum of green light extracted through said second electrode, and wherein an optical path length L of said cavity portion has a positive minimum value in a range that satisfies the equation below and m_1 is the integer m that satisfies the equation below and q is the integer not smaller than 10:

$(2L)/\lambda + \Phi/(2\pi) = m$ (m is an integer).